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Consequences of Forced Migration: A Survey of Recent Findings*

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Forced migration as a consequence of wars, civil conflicts, or natural disasters may have consequences different from those of voluntary migration. Recent work has highlighted the consequences of forced migration on receiving populations, on migrants themselves and on sending populations. We document findings from recent work, on education and other economic outcomes, but also on political outcomes. We summarize key lessons and point to gaps in the literature.

Keywords: Forced Migration, Wars, Disasters, Uprootedness

JEL classification: F22, R23, D74, Q54

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Forced migration is defined as "*movements of refugees and internally displaced people (those displaced by conflicts) as well as people displaced by natural or environmental disasters, chemical or nuclear disasters, famine, or development projects.*"

(International Association for the Study of Forced Migration, IASFM)

I. Introduction

At the end of 2017, more than 65 million people were displaced from their home regions due to interstate wars, civil conflicts, and natural disasters (UNHCR, 2018). Collectively these migrants are considered forced migrants. Forced migration is as common today (e.g. Syrian civil war refugees, Rohingya expelled from Myanmar) as it was in history (e.g. mass population movements after WWII) and is a world-wide phenomenon. With climate change, forced migration as a result of natural disasters is even bound to increase.¹

The counterfactual to forced migration can be death, violence, perceived threats of bodily harm, psychological distress, or severe economic loss (e.g. destruction or expropriation of property). Forced migration has potential consequences for host populations, migrants themselves, and for the populations at origin.

A brief taxonomy of forced migration

Episodes of forced migration display substantial variation in scale: conflicts or natural disasters can affect small groups in the case of selective expulsions along ethnic, racial or religious lines, or can take the form of mass expulsions of millions of individuals. Most of the cases of forced migration studied over the last decade look at rather massive migration flows that are rarely found in peace times.² Also natural disasters, such as volcano eruptions and floods, can trigger migration flows and display consequences similar to those from civil wars or war evictions.

Forced migration may be temporary, such as when refugees find a transitory abode in a safe country while waiting to return to their home countries, or permanent, as in the case of forced population movements after WWII when European borders were redrawn.

¹ See e.g. Marchiori et al. (2012), Beine and Parsons (2015), and Cattaneo and Peri (2016).

² Migration waves that were largely voluntary in nature and have attracted considerable interest are, for instance, the U.S. Age of Mass migration in 1850-1914 (see e.g. Abramitzky et al., 2014, and Sequeira et al., 2018) or, more recently, migration of Eastern Europeans to the UK following EU enlargement in 2004 (see e.g. Bell et al., 2013).

Forced migration can have consequences different from voluntary migration, both for populations at destination and origin, but also for the migrants themselves. While voluntary migration is likely to follow economic cost-benefit considerations of the migrants, involuntary migration is the result of forces outside the control of the migrants.^{3,4}

However, it is important to note that the distinction between voluntary and forced migration is by no means a binary one.⁵ One can well argue that cross-country mobility within the EU is all voluntary, and that wholesale expulsion of populations resulting from border changes in the wake of World War II was forced and virtually universal. But there are intermediate cases, e.g. in the case of civil wars, where the perceived level of threat varies across individuals. Surely, migration in times of civil wars is not voluntary, but to the extent that not all individuals in localities affected by a civil war do migrate, some papers explicitly model migration as a choice in the face of perceived threats (e.g. Engel and Ibañez, 2007; Ibañez and Velez, 2008). Still, not moving comes with a high risk of continued repression, threats or even death.

Identification

A typical concern for econometric analyses in the migration literature are issues of endogeneity. This includes omitted variables, reverse causality, or selection issues, among others. When studying the impact of migration on natives' wages, for instance, any potential negative effects due to increased competition might be underestimated because migrants self-selected into moving to the most prosperous regions which could more easily accommodate more workers without harming natives. Likewise, the most affected natives might have left areas with the largest immigrant inflows to avoid increased competition. Selective in- and out-migration of different groups due to unobserved factors therefore can significantly confound such relationships.

From an identification point of view, most episodes of forced migration are considered “exogenous” for receiving populations and migrants alike, and its consequences on various outcomes are typically interpreted as causal effects.⁶ This is because most receiving countries

³ Some of the terms in the literature associated with forced migration are as follows: refugees, displacement/displaced, expulsion/expellees, exiles. Voluntary migrants are often called economic migrants.

⁴ From the perspective of host populations, also the scale of immigration as a result of forced migration elsewhere is sometimes outside their control, conditional on the host country welcoming refugees. For instance, the German government may have under-estimated the inflow of Syrians into Germany after 2015, after Angela Merkel's welcome to Syrian refugees.

⁵ See also Dustmann et al. (2017) for a discussion of differences between refugees and economic migrants in their work on refugee waves and policy in the EU since the 1980s.

⁶ Migration lotteries are a rare alternative to convincingly identify causal effects of migration on migrants themselves. See Gibson et al. (2018) for one example and further references.

allocate refugees across space according to pre-determined rules while restricting the mobility of refugees. The allocation of refugees in Germany, for example, follows the so-called Königsteiner Schlüssel, an administrative rule which distributes new arrivals across federal states based on state tax revenues and population.⁷ Refugees are not allowed to move until their refugee status is formally acknowledged, a process that can take several years.

Studies of cases where such allocation mechanisms are non-existent or imperfect typically employ quasi-experimental methods instead. Examples of such methods include difference-in-differences, where identification comes from parallel pre-trends in the outcomes between units that did or did not experience the inflow of refugees, or generalized difference-in-differences where there is variation in the intensity of the inflow (e.g. Tumen, 2016; Kreibaum, 2016). Others have used spatial regression-discontinuity designs exploiting location patterns of forced migrants either at destination (e.g. Schumann, 2014) or at source (e.g. Testa, 2018). When forced migrants have some control over their location choice, such as internally displaced persons, other work has used instrumental variables regressions. The distance to geographically available border crossings (Del Carpio and Wagner, 2015; Akgündüz et al., 2018), pre-existing networks of the affected migrant group in the receiving area (Morales, 2018), or the degree of violence in migrants' home region (Calderón-Mejía and Ibáñez, 2016) have been used to generate plausibly exogenous variation in the inflow shares of refugees.

The literature on the consequences of migration for receiving populations often does not distinguish between forced and voluntary migrants, even though the two groups of migrants may be quite different, as Cortes (2004) and Ruiz and Vargas-Silva (2018) pointed out.

Assimilation

The migration literature routinely looks at first and second-generation immigrants to analyse assimilation with the host population. Both forced and voluntary migrants share the experience of having to adjust to a new environment. However, forced migration is likely to be a distinct experience for the migrants themselves. It comes with the experience of losing physical assets and being uprooted against one's will.⁸ Furthermore, there are often implicit differences in time horizons between refugees and economic immigrants because the former

⁷ Note that while the location choices of refugees are restricted, potential out-migration effects of natives may still be present.

⁸ Uprootedness refers to the idea that loss of possessions can have effects on economic behaviour of migrants. Brenner and Kiefer (1981) make this point for investment behaviour of forced migrants: "a group which had been compelled to emigrate from a country might take the portability of an asset into consideration when making an investment in a new country."

sometimes expect not to be able to return home,⁹ whereas many economic immigrants may have explicit plans for return migration. Cortes (2004) documents two primary findings for U.S. immigrants. First, refugee migrants on average have lower annual earnings upon arrival; however, their annual earnings grow faster over time than those of economic immigrants. Second, refugees over time tend to have higher country-specific human capital investment than economic immigrants.¹⁰ The growing literature on forced migration documents deep and long-lasting effects on preferences, behaviour and economic outcomes of forced migrants themselves.

The left-behind

Migration may also affect those left behind, both in the context of voluntary migration and forced migration. A vast literature has explored emigration from developing countries and its effects on the sending population (see Docquier and Rapoport, 2012). When it comes to forced migration, expulsions target ethnic or religious minorities, partially motivated by economic motives. To the extent that many of the situations studied in the literature have characterized such minorities as more highly educated, the sending population may incur negative consequences in the medium to long run because of the associated loss in human capital (e.g. Nobel-prize winning Jewish scientists expelled from Germany under the Nazis).

New developments in the literature

In this survey, we will concentrate on research on the consequences of forced migration that was published over the last 10 years.¹¹ Two related surveys by Ruiz and Vargas-Silva (2013) and Maystadt et al. (2019) are mainly concerned with forced migration in the context of developing countries. Given the development angle, they have a stronger focus on civil wars. There is also partial overlap with a recent VoxEU book by Fasani (2016) that covers

⁹ This is more obviously the case when forced migration is the result of redrawn borders, or after natural disasters that make the original place of residence uninhabitable. In other cases, refugees may have a justified hope to return home once a conflict subsides or once areas affected by a natural disaster become inhabitable again. In fact, refugees *do* return home in many cases, e.g. Burundian and Rwandan refugees in Tanzania (see e.g. Kofol and Naghsh Nejad, 2018).

¹⁰ It is not immediately clear whether this pattern translates to Europe. Bell et al. (2013) look at the effect on crime of two migration waves to the UK: asylum seekers coming to the UK in the late 1990s and early 2000s, and economic migrants from Eastern Europe arriving after EU enlargement in 2004. Their finding that the first wave led to a modest but significant rise in property crime, while the second wave had a small negative impact, is consistent with differences in labour market opportunities, and a *lower* expected time to remain in the UK for asylum seekers: around 70% of asylum seekers had their claim rejected or withdrawn, whereas EU migrants have a permanent right to abode by virtue of the EU's free mobility of labour.

¹¹ Dustmann and Glitz (2011) give a comprehensive overview of research on migration and education. However, they "deal mainly with [...] movements that are due to individual decisions based on some optimizing considerations." (p. 329), i.e. they do not dwell much on forced migration. The labor market effects of (voluntary) immigration are surveyed by Kerr and Kerr (2011), and Dustmann et al. (2016).

work on refugees and economic migrants in the EU and U.S., with a particular focus on refugee and immigration policies.¹²

Our survey goes beyond previous surveys in two ways: first, we extend the time coverage to research produced over the past years.¹³ Second, we extend the scope to cases that are historic in nature, as well as to contemporary settings in developed countries. The recent literature has seen a burst in work looking at the consequences of forced migration as a result of wars, civil conflicts and disasters, often over long time horizons. The latter has been facilitated by digitization of historical censuses (see Abramitzky, 2015; Mitchener, 2015), by access to novel register data over long time periods, as well as by an increased interest in the long shadow of history (see e.g. Nunn, 2009; Spolaore and Wacziarg, 2013). Another trend has been the growing body of research on consequences of natural disasters (e.g. Boustan, Kahn, Rhode and Yanguas, 2017).

Outline and key insights

We start by surveying the literature on the consequences of forced migration for receiving and sending populations.¹⁴ After that, we look at the growing literature on the consequences of forced migration for the migrants themselves.¹⁵ We also deal with the decision to migrate under threats, which characterizes situations such as civil wars when migration is not universal, leading to selective migration. We close by summarizing key insights and by suggesting the most promising areas for future research.

Our survey brings out important new insights gained from recent research. First, forced migration is an experience distinct from voluntary migration. It often comes with the loss of possessions, and physical threats at origin or *en route* to a safer place. It is a life-changing experience for many, with the potential to shape economic behaviour of forced migrants and their descendants in ways different from merely “changing places”.

Second, in case of uncertainty over legal status at destination, assimilation can be slower

¹² See Hatton (2017) for a detailed discussion of policy options in response to the recent refugee crisis.

¹³ For space reasons, we cannot cover the fascinating debate around one of the classical studies of refugee flows, the Mariel boatlift originally analysed by Card (1990). See Borjas (2017), Borjas and Monras (2017), Clemens and Hunt (2018), and Peri and Yasenov (2018). While the Mariel boatlift brought a mix of political refugees (arguably “forced migrants”) and economic migrants, the debate highlights a very important issue: new theoretical angles, new data and methodological innovations (e.g. the use of the synthetic control method) can shed new light on older findings even after several decades. It is likely that many of the findings we summarize will also be re-assessed in the future.

¹⁴ In the context of the literature on voluntary migration, when referring to high-skilled migration, one often finds some symmetry in discussion of effects on receiving and sending populations under the heading of brain drain, brain gain, and brain exchange.

¹⁵ While our focus is on *consequences* of forced migration, the *causes* may well influence the consequences. The severity of the experience of forced migration affects the severity of the consequences.

than for voluntary migrants. Inversely, forced migrants that expect to never return to their place of origin may behave quite differently from economic migrants who often have firm plans to return home. Third, many recent studies are concerned with forced mass migrations that are not only of interest to economic historians, but also give a unique insight into how large exogenous shocks affect various economic outcomes. Such episodes have been used to yield insights into areas as broad as labour economics, economic geography, cultural economics, health economics and political economy.

We feel that not all research takes the distinct nature of forced migration seriously enough. Researchers often content themselves with either studying an important historic episode of forced migration for its own sake – which of course is very valuable –, or by exploiting forced migration as a source of exogenous variation. As our survey will show, forced migration can lead to lasting behavioural changes because it is often a more life-changing experience than voluntary migration. We expect additional insights in future work that uses insights from other disciplines such as psychology, medicine or sociology to help us better understand the link between forced migration and economic behaviour.

Throughout the paper, we provide tables outlining the studies we discuss in the respective sections, that summarize information about many aspects of each of these studies, such as their period and unit of observation and the variable(s) of interest.¹⁶

II. Consequences of Forced Migration for Receiving Populations¹⁷

The Employment and Wage Effects of Forced Migration on Locals

A central topic in the immigration literature is concerned with the impact of immigrants on wages and employment of locals.¹⁸ Likewise, several papers have considered the effects of inflows of forced migrants and refugees on these prominent outcomes. Recent studies find mostly positive effects of refugee inflows on host country workers' wages and employment, with few exceptions depending on the context, timeframe, sample composition, and the substitutability between locals and displaced workers.

Maystadt and Verwimp (2014) and Ruiz and Vargas-Silva (2015) study the influx of refugees fleeing from the Hutu-Tutsi conflict in Burundi (1993) and Rwanda (1994) into the

¹⁶ Extended versions of these tables are available in the online version: <http://doi.org/10.3886/E108422V1>. We deliberately omit from discussion in the main text most of the papers that were covered in the earlier survey on forced migration in a developing country context (Ruiz and Vargas-Silva, 2013), when they fall outside our definition of recent work.

¹⁷ Papers in this section are summarized in Table 1.

¹⁸ For instance, see Blau and Kahn (2015) for a review.

region of Kagera (north-western Tanzania). Maystadt and Verwimp (2014) show that agricultural workers experienced increased competition from refugees, while agricultural producers were able to take advantage of the refugee inflow which resulted in lower wages. Ruiz and Vargas-Silva (2015) demonstrate that larger refugee inflows are associated with a higher probability of working for the government or in professional occupations, possibly due to the employment opportunities generated by help organizations, or government intervention. Ruiz and Vargas-Silva (2016) provide further evidence for the reallocation of Tanzanians across economic activities. Maystadt and Duranton (2018) confirm that the refugee presence has had a persistent and positive impact on the welfare of the local population. They attribute this to a decrease in transport costs resulting from investments following the refugee inflow.

Looking at the temporary migration shock resulting the Arab Spring migration through Italy in the early 2010's. Labanca (2016) documents zero overall employment effects on natives. However, there are significant and offsetting short-term effects across industries. There is evidence of displacement effects in mining, hotels, restaurants and wholesale trade but positive effects on employment in construction and educational services. Labanca proposes increased demand for goods and services from the latter sectors as one channel why employment of natives went up.

The recent influx of Syrians to Syria's neighbouring countries and to Europe has created ample interest in the resulting employment and wage effects. Tumen (2016) studies the inflow of Syrians into the Turkish border regions. Areas with a higher share of Syrian refugees experienced a stronger shift from informal to formal employment by locals. Syrians were not granted work permits and hence they appear to substitute locals in the informal sector. While there was a small increase in the unemployed to population ratio of 0.77 percentage points, wages were not significantly affected. In the case of Germany, which is studied by Gehrsitz and Ungerer (2017), Syrian refugees did not displace local workers but faced difficulties in finding gainful employment. Despite the arrival of more than one million Syrians in 2015 alone, this result is consistent with the fact that refugees in Germany must wait a substantial amount of time before they can enter the labour market (see Marbach et al., 2018). One difference between the German and Turkish case is the larger size of the Turkish informal sector (Tumen, 2016).

The legal impediments to refugees entering the labour market are usually motivated by politicians' concerns about their local electorate's response to increased competition in the labour market. In a recent paper Clemens et al. (2018) argue that providing refugees with

immediate formal labour market access benefits both refugees and hosts, leading to less vulnerability and poverty for refugees, and positive effects on fiscal revenue for local governments that in turn benefit the host population.

Sectoral composition is only one dimension that matters. There is also considerable heterogeneity in the effects of forced immigration on locals across occupations. The case of the Darfur conflict in Sudan from 2003-09 used by Alix-Garcia and Bartlett (2015) is another example. They compare long-term urban residents in a treatment and a control city where the treated city received an inflow of internally displaced persons. According to their results, individuals in the treated city had a higher employment probability and were more likely to be employed in the high-skilled sector. While the refugee influx increased the demand for goods produced by the local population, it did not offset the negative employment effect from increased competition for low-skilled workers.

Calderón-Mejía and Ibáñez (2016) document negative wage effects from increased competition between internally displaced people and host workers in Colombian cities. They show that especially the host population of low-skilled workers and those employed in the informal sector are affected the worst. However, the impact of refugee inflows on wages not only depends on the legal framework and the capacity to which these new workers can be accommodated, such as in the comparison between Germany and Turkey, but also on the timeframe considered. Morales (2018) also finds negative wage effects coming from inflows of internally displaced in the Colombian context. He shows though that this effect dissipates over time due to labour reallocation and outmigration. The only group with experienced longer lasting wage losses were low-skilled women in this case.

Negative wage effects arising from increased competition can also be mitigated by avoiding competition in the labour market. Tumen (2018) provides evidence that Turkish youths in areas with a higher influx of Syrian refugees were more likely to be enrolled in high school. Most of the effect is driven by young males with less educated parents. These are the new labour market entrants that would have had to compete with the dominantly low-skilled Syrian refugees, had they not remained in school for longer.

There has been a true explosion of papers analysing forced migrations in historic contexts.¹⁹ From an identification point of view, historic settings oftentimes have the appeal of coming with natural experiments that can be exploited to generate exogenous variation in the destination location of forced migrants. Braun and Mahmoud (2014) use the case of

¹⁹ Most of the studies of historic episodes of forced migration in this section look (mainly) at contemporary outcomes. Only few (also) look at long-run outcomes.

Germany after World War II as a natural experiment where the resettlement decision was highly restricted by authority of the occupation forces. This setting allows to exclude the possibility of endogenous location choice of migrants. Using the post-war inflow of 8 million Germans from Germany's former eastern territories to West Germany, they estimate the displacement effects on West German workers. Regression results show a substantial reduction in the employment of locals. However, they also point out that this is driven by strong non-linearities and specific occupations in regions with very high inflow rates. Their work thus points to an important econometric challenge: to carefully choose how to split samples given the many dimensions along which data can be divided, such as age, gender, industry, region, skill, group, among others. Too few splits potentially mask effect heterogeneity while too many splits can lead to spurious correlations that arise from multiple testing.

In a later paper, Braun and Dwenger (2017) find that more industrialized counties and those with lower refugee inflows were more successful at integration. The size and the capacity to accommodate refugees determined the labour market consequences of such inflows. Compared to the modern case of Syrian refugees who did not displace German workers, not least because of restrictions to their labour market access, the German refugees after World War II were more similar with respect to language, culture, and had full voting rights. Substitutability of locals and migrants as well as government regulations are key drivers of the effect size and direction.

Testing the mechanisms and channels through which employment and wage effects on locals operate is often restricted by data availability. One study that can say more about mechanisms is provided by Murard and Sakalli (2018). They exploit the resettlement of 1.2 million Greeks from Turkey to Greece after the Greco-Turkish War 1919-22. They find positive effects of the inflow of forced migrants on long-run economic outcomes. Municipalities with a higher refugee inflow in 1923 have higher levels of earnings, household wealth, and education in 1991. They also have larger financial and manufacturing sectors. According to the authors' findings, the potential channels behind these positive effects are coming from agglomeration economies that led to specialization and knowledge inflows which were imported by the refugees.

Such agglomeration economies are also found by Braun and Kvasnicka (2014) and by Peters (2017) in the post-war West-German context. Braun and Kvasnicka (2014) show evidence that the influx of expellees from Germany's former East accelerate the speed of transition away from low-productivity agriculture. Peters (2017) finds a positive relation

between refugee inflows and per capita incomes, manufacturing employment, and increased plant entries from 1933 to 1970. He rationalizes his findings with a general equilibrium trade model with local agglomeration that allows for endogenous technological change.

Another example is the Soviet occupation of South-East Finland during World War II which forced a substantial share of the population into other parts of the country. Sarvimäki (2011) argues that this population inflow generated significant agglomeration economies in receiving areas. These host municipalities experienced subsequently higher population growth and developed faster in terms of wages and industrial development. This paper shows that agglomeration economies matter even when the initial stock of population is relatively low before the inflow of new workers.

Prices, Consumption, and Production

The influx of forced migrants not only means an addition of workers but also of consumers. The reaction of goods prices depends on the degree to which refugees can contribute to their production. In Turkey, Syrian refugees mainly found employment in the informal sector which reduced the prices of goods produced by this part of the economy (Tumen, 2016; Balkan and Tumen, 2016). Alix-Garcia et al. (2018) study the case of Kenya, where refugees were not allowed to work. Instead, refugees generated increased demand for agricultural and livestock products that the hosts produced. This in turn relates to higher economic activity (proxied by nightlight intensity) and consumption in host communities.

In the Sudanese context considered by Alix-Garcia and Bartlett (2015), displaced individuals raised prices for goods due to higher demand. Competition for consumption is also likely to be fiercer in markets that are slow to adjust supply such as housing and farm land. Alix-Garcia et al. (2011) study the price behaviour of food and housing in Sudan after the Darfur conflict. While food prices were unaffected, mainly due to foreign aid, house prices increased.²⁰ Also Depetris-Chauvin and Santos (2018) find substantial price increases in Colombian cities that received more internally displaced persons. The price increase is not uniform. Excess demand for low-income accommodation raised prices for this type of housing while at the same time the house prices for high-income accommodations fell. They argue that the latter effect is due to excess supply and an increase in homicide rates.

Balkan et al. (2018) find the opposite case for the influx of Syrian refugees into Turkey. They show that Turks, trying to avoid living with refugees, increasingly sought higher quality

²⁰ Note that also the type of aid made available can affect such developments. Taylor et al. (2017) provide a simulation exercise to quantify the impact of cash aid to refugees using Congolese refugee camps in Rwanda. They argue that such aid can create positive spill-over effects for host households and businesses in the locality where refugees are hosted.

housing which therefore increased prices for this type of accommodation. At the same time, the price for lower quality housing remained unchanged as the Turks who moved away were replaced by refugees. Mobility of locals and attitudes towards incoming refugees can therefore generate a complex pattern with respect to the resulting price effects.

Such price developments are worrisome as they potentially affect the social peace by increasing inequality. With low-income accommodation typically being rented, this leads to a higher income share that is transferred from renters to owners of property. The distributional consequences of refugee inflows for wealth or income inequality among locals have received comparatively less attention.

Another potential source of societal problems arises when the inflow of labour and productivity does not offset the increased demand, prices for food items rise which can have strong negative impacts on the local population as shown by Kofol and Naghsh Nejad (2018). They study the case of Tanzania and how the inflow of Burundian and Rwandan refugees in 1993-94 affected child labour. While they find a decline in child labour in the immediate post-inflow years, the picture reverses 10 years later. As agricultural productivity could not match the increased demand, household welfare fell, and more children were drawn into farm work and food production.

The opposite scenario also exists in which refugees have a positive net effect on productivity which can potentially decrease prices. Such productivity shocks have been shown to have long-lasting effects on host economies.

One such case is the expulsion of ca. 43,000 Huguenots from France in 1685, of whom almost half settled in Brandenburg-Prussia. and who raised the productivity of textile manufactories, as shown by Hornung (2014). These skilled workers not only brought knowledge or technology with them. They partially offset the population lost due to war, plague, and famine during the Thirty Years' War. The positive productivity effects can be found more than hundred years after the expulsion of the Huguenots which Hornung (2014) estimates by using Prussian firm-level data from 1802.

From a modern perspective, this is a special case wherein the population of forced migrants was more skilled than the local population. Another case is that of expelled Jewish scientists from Nazi Germany who advanced innovation and patenting in the U.S. (Moser et al., 2014). They show that the expulsion and persecution of scientists in Nazi-Germany led to emigration of these high-skilled workers to the U.S. Using inventor-level data, the authors

show that these forced migrants spurred inventions and patents in chemistry. They did so by attracting scientists to their field rather than increasing productivity of incumbent inventors.²¹

Mirza (2018) looks at the population exchange between India and Pakistan after the partition. This exchange implied a movement of 17 million people across the two countries within less than four years. Using district-level data in Pakistan, he finds that areas where the population exchange was more intense have experienced faster growth in urbanization and have seen greater improvements in literacy in the long-run. This result is explained by the fact that the refugees who moved to Pakistan were better educated than the native population and tended to concentrate more in non-agricultural occupations.

While all these studies are historic, similar effects can be found for the modern case. The inflow of Syrian refugees to Turkey from 2012 onward benefitted firms as refugee labour acted as a complement to formal labour (similar to Tumen, 2016). This increased entry by foreign firms in high-inflow areas and raised profits and sales, according to Akgündüz et al. (2018). However, the authors are cautious about pre-existing trends in their profits and sales measures across different regions. Nevertheless, their findings on firm entries can explain the limited employment effects found for locals. While refugees increase competition among the low-skilled, this is offset by new firms entering into the market. A similar conclusion is reached by Altındağ et al. (2018). They show that firms in receiving areas increased production at the intensive and extensive margin, especially if they drew labour from the informal sector, such as construction or hospitality businesses.

Political and Other Outcomes

During the influx of Syrians to Europe, some countries welcomed refugees while others did not (see Bordinon and Moriconi, 2017). Attitudes towards refugees and other forced migrants can be volatile depending on public opinion. A factor that influences the latter is how well refugees fit into their host society on multiple dimensions. Even for more homogeneous migrant-host relations, such as the case of Germans from the eastern territories after World War II, differences in religion reduced intermarriage and increased local support for anti-expellee parties (Braun and Dwenger, 2017).

For the case of Syrians in Germany after 2015, Gehrsitz and Ungerer (2017) do not find a relationship between higher refugee inflows and anti-refugee party vote shares at the county level. This is despite a small but significant increase of criminal offenses in these areas. They

²¹ A related study, but for voluntary migration of Soviet mathematicians to the U.S. after the collapse of the Soviet Union is Borjas and Doran (2012).

show that drug and fare-dodging offenses rose slightly, a fact that the authors partially attribute to the high hurdles for refugees to enter the German labour market.

Results on this topic are, however, mixed. Dinas et al. (2018) find that Greek islands which experienced larger inflows and pass-through migration of Syrian and other refugees in 2015 increased their support for the extreme right party. They estimate an average increase in vote shares for the Golden Dawn party of 2 percentage points. While this sounds modest, it is a 44% increase when compared to the average vote share that this party typically receives. Dustmann et al. (2018) find a similar result for Denmark. They show that refugee allocation influences voter turnout and that larger shares of allocated refugees leads to a right-shift in voting behaviour. This benefits the extreme right and to a lesser extent the centre-right parties. Interestingly, they find this for all but the largest municipalities. In the most urban municipalities, the effect is the opposite.

In closely related work, Hangartner et al. (2018) conduct a (natural) survey experiment in Greek islands and check natives' attitudes and political activism against refugees. Not only do they find strong anti-refugee and anti-immigrant attitudes and activism but also moderate spill-over effects to other outgroups that persist in time.

Another less explored area is how refugees themselves affect political outcomes which, in turn, impact the host population. Chevalier et al. (2018) examine the West-German setting after World War II to show that the refugee inflow from the former eastern territories significantly altered taxation and spending patterns of local governments. While areas with higher refugee inflows increased taxation for businesses and farms, they reduced spending on infrastructure and housing, and instead raised welfare expenditures. The authors show that these changes in spending patterns are persistent. They attribute this in part to the political influence of refugees who, as de facto Germans, had full voting rights in West Germany.²²

Refugees sometimes actively affect the societal and political landscape in their host countries. One such case is the failed 1848 democratic revolution in the German states. The political leaders of the revolution, the so-called Forty-Eighters, ultimately had to flee and most of them ended up in the United States. Dippel and Heblich (2018) show that towns that received a Forty-Eighter had up to 80% higher enlistment rates on the side of the Union Army during the U.S. Civil War (1861-65). Due to their libertarian ideals, the revolutionary

²² Tabellini (2018a,b) has similar work for two voluntary migration waves in the U.S., namely the mass immigration of Europeans in the early 20th century and the Great Migration of blacks into northern U.S. cities in the mid 20th century. He shows that both inflows led to lower public spending, and in the case of the European immigration, to lower local taxes. Mayda et al. (2016) note that naturalization of immigrants has a crucial influence on election results, as immigrants are less likely to vote Republican.

leaders were strongly opposed to slavery. If a Forty-Eighter led a regiment, then those had markedly lower desertion rates. The effect is particularly pronounced for German-born soldiers. The study shows how these forced migrants carried their political ideals into the New World, and how they inspired others to fight for them.

Schumann (2014) takes an economic geography perspective on expellee inflows into West Germany after WWII. His work starts from the observation that expellees were resettled only into the British and American occupation zones, but not in the French-occupied zone. Using a spatial regression discontinuity framework, he estimates the persistence of the population shock over a 20-year-period. The difference in population levels originating from differential location patterns is highly persistent, suggesting that population patterns in the post-WWII decades in West Germany were not determined by locational fundamentals.

When forced migrants differ from the receiving population in their social norms, this can lead to diffusion of norms between the two groups. Blum et al. (2018) study Stalin's ethnic deportations during World War II. Their emphasis is on the comparison of areas that received mostly Protestant Volga Germans and areas that received Muslims from the North Caucasus. Both groups were deported from their original homelands within the Soviet Union to reduce the risk that these groups of non-Russians would undermine Soviet war efforts. Both groups were only allowed to return to their homelands after the collapse of the Soviet Union. The key finding is that in areas with more Protestant deportees, more gender-equal norms (which happened to coincide with Soviet ideology) diffused among the native Russian population,²³ whereas more gender-unequal norms of Muslim deportees did not spread.

III. Consequences of Forced Migration for Sending Populations²⁴

Events such as wars or natural disasters affect the entirety of a local population but not necessarily everyone flees from such events. Whether stayers are positively or negatively selected depends on the conditions of the event. Stayers may be the wealthiest who have the means to cope with the adverse conditions, or the poorest who could not afford to relocate out of harm's way. In the case of civil wars, those who stay could be the least risk-averse or the most loyal to the current regime. In this sense, there are as many potential reasons for staying as for migrating.

²³ Becker and Woessmann (2008) show evidence of more gender equality in education in Protestant versus Catholic counties in Prussia, potentially a consequence of Luther's urge that every town should have a girls' school.

²⁴ Papers in this section are summarized in Table 2.

Estimating how forced migration affects the stayer population is difficult when the cause for migration affects outcomes directly. The main challenge is to disentangle the direct effect of the natural catastrophe or war from the effects generated by the outmigration of select groups of individuals. Such issues are also faced by the related literature that studies the brain-drain generated by the departure of skilled and talented migrants for economic reasons.²⁵

The effects of forced migration from the viewpoint of the stayer population are more easily studied when they are politically motivated. State-mandated expulsions, which are targeted against a specific group, are normally near-universal. Examples of this are the expulsions of Greeks and Armenians from the Ottoman Empire during and after World War I, the persecution and mass murder of Jews in Nazi Germany, or the removal of Poles from the Polish Eastern Borderlands (Kresy) after World War II by the Soviets. By definition, in the case of universal expulsion of certain groups, the effects of forced migration on stayers can only be analysed for individuals who do not belong to the affected migrant group.²⁶ The consensus in the literature is that expulsions tend to generate negative outcomes for stayers both at the individual but also the aggregate level in the sending economies.

Aggregate Effects on Economies at Origin

Mass scale expulsions have the potential to affect long-run economic outcomes by permanently altering an economy's social structure. Nunn (2008) and Nunn and Wantchékon (2011) look at the long-run effect of Africa's slave trade in the period 1400 to 1900 on modern-day outcomes in Africa. Even though the term slave "trade" describes an economic interaction (e.g. manufactured goods against humans), it arguably constitutes a massive episode of forced migration – certainly against the will of the slaves – to various destinations outside Africa. Nunn (2008) shows robust negative relationship between the number of slaves exported from a country and current economic performance. Nunn and Wantchékon (2011) show that current differences in trust levels within Africa can be traced back to the transatlantic and Indian Ocean slave trades.

Acemoglu et al. (2011) study the effect of the Holocaust on economic growth outcomes in Soviet cities and administrative areas (oblasts). They compare cities and oblasts with and without Nazi occupation during World War II. The authors provide evidence that increased

²⁵ For a review see Docquier and Rapoport (2012).

²⁶ Even though state mandated expulsions seek to remove an entire sub-population, usually some individuals of the affected group remain. This is because they are in hiding, disguise, or could take advantage of rare exceptions, such as Germans who married a Czech which opened the opportunity to re-apply for Czech citizenship and avoid expulsion from the Czech borderlands after World War II (see Testa, 2018).

intensity in the persecution and mass murder of Jews by the Nazis reduced cities' population size and increased vote shares for Communist political candidates in the post-war period. They find significantly lower wages and per capita incomes in affected oblasts today. The main channel which is proposed for this finding is the reduction in the size of the middle class. As in the German case, Jews in the Soviet Union were overrepresented in white collar middle-class employment. The shock to this social structure is supposedly what is driving the persistence of the effects.

Grosfeld et al. (2013) exploit a spatial discontinuity created by the "Pale of Settlement" where Jews had permission to reside in the Russian Empire. With the Nazi invasion during World War II, the Pale of Settlement saw the expulsion of Jews and therefore became more similar to municipalities across this informal border in terms of culture, ethnicity, and religion. The cohabitation of Jews and non-Jews on the Pale side of the border created strong within-group loyalty due to ethnic animosity. Despite the murder and deportation of Jews by the Nazis, the authors show that these entrenched cultural attitudes did not die out. Instead, they are still visible in a significant anti-market culture, lower entrepreneurialism, and higher levels of trust among nowadays residents on the side of the Pale.

While cohabitation of groups can generate long lasting negative outcomes that persist even after the expulsion of a given group, the opposite is also possible. Arbatli and Gokmen (2018) show that Turkish districts that used to have an Armenian or Greek community until their expulsion in 1915-17 and 1919-23, respectively, have higher population density, urbanization rates, and night time luminosity today. They argue that the long-run persistence of these positive effects is driven by the minority communities' effect on local human capital accumulation.

Not only the social but also the economic structure and local institutions can be severely affected. Pascali (2016) provides evidence that Italian municipalities that expelled their Jewish population in the 15th and 16th century have a less developed banking system and lower incomes today. A recent paper by Testa (2018) uses the expulsion of 3 million Germans from the Czechoslovak borderlands after World War II as a natural experiment. In this case, Czechs and Germans were quite homogeneous in terms of their economic and cultural characteristics. For identification, he uses a spatial regression discontinuity design that exploits the border of the former *Sudetenland* to Nazi Germany which was formed after annexation of the Western part of Czechoslovakia in 1938 after the Munich agreement. Czech municipalities across this border, where Germans were driven away after the war,

were found to have a lower population density, higher rates of unemployment, less skill-intensive industries, and lower levels of education in 2011.

One mechanism behind these persistent effects identified by Testa (2018) is the lack of agglomeration economies.²⁷ While 3 million Germans had been expelled, only 1.2 million Czechs replaced them in the two years following the war. Another channel is the erosion of property rights. Settlers competed for abandoned German houses and productive assets while local authorities abused their power for personal gain. The lack of agglomeration economies, the negative selection of settlers, and the low protection of property rights generated the dynamics for the negative persistence of the expulsion in the long-run.

Forced Migration and the Human Capital of Stayers

The negative aggregate effects tend to be rooted in the adverse results generated by forced migration on stayers at the individual level for key factors of growth such as human capital accumulation. A prominent setting for the study of forced migration and the educational outcomes of the staying population is the case of Jews in Nazi Germany. As a highly educated group themselves, Jews were disproportionately often employed as teachers in schools or universities. Their expulsion from civil service between 1933-38 had significant negative educational effects for the non-Jewish population in Germany at all levels of instruction.

Using individual level data from the German Socioeconomic Panel, Akbulut-Yuksel and Yuksel (2015) show that adults, who were of school age during the years of persecution, had fewer years of education, and a lower probability to have completed school or to go to university. They use cohort and regional variation in the percentage of Jewish population as a natural experiment. The deficit in human capital accumulation is particularly strong for girls, for boys who lived in areas with particularly high shares of Jewish population, and for those whose parents had lower levels of education. Given that their effects can be found for adults fifty years after the Holocaust, an open question is how their children were affected or whether there are intergenerational effects of the expulsions.

Bharadwaj et al. (2015) find similar educational effects from the population exchange between India and Pakistan after the partition using district level data. While they work with aggregate data that cannot directly show the impact on educational attainment on the stayer population in India, they provide evidence for strong compositional changes. A 10% increase

²⁷ Interestingly, this is the mirror image of Sarvimäki's (2011) case of Finland, where the inflow of refugees from South-East Finland to the rest of the country generated agglomeration economies and positive economic developments as a consequence.

in outflows is associated with literacy rates that are about 1.2 percentage points lower. However, given the exchange character of this migration event, the same increase in inflows raised literacy by 3 percentage points. This is due to the higher educational attainment among migrants. Whether the stayer population gains or not depends on whether inflows offset outflows, and on the size of spillover effects that arise from having a more literate community in affected districts.

In the context of tertiary education, Waldinger (2010) documents significant drops in faculty quality among universities' mathematics departments where more Jewish scientists were removed from service by the Nazis. Using a novel data set on mathematics PhD students between 1923 to 1938, he shows the long-run effects of the faculty quality drop on these new scholars. Affected PhD students at the time were less likely to publish their dissertation, to be promoted to full professor, and had lower lifetime citations. These effects were concentrated among younger scholars and did not affect those with an already established career, as Waldinger (2012) finds no effects of changes in peer quality on the scholarly outcomes of professors in mathematics, physics, and chemistry departments.

Effects on Firm-Level Outcomes in Sending Economies

Expulsion of high-skilled can be detrimental also to firm-level outcomes. An example for this is provided by Huber et al. (2018). They consider large firms in Nazi Germany after the removal of Jewish managers. The population share of Jews in Germany in the early 1930s was less than one percent, yet the share of senior managers with a Jewish background was close to 16 percent. The dismissal of these leaders was associated with a reduction in the observable characteristics of firms' senior management with respect to experience, university degrees, and connections to other firms. The authors show a significant drop in firm value on the stock markets which lasts until the end of the sample period in 1943. Dividend payments and the return to assets were reduced as a result.

Even though the evidence so far is mainly focused on historic contexts that provide natural experiments for internally valid identification of effects, the overall indication is that forced migration of certain subpopulations via expulsion is detrimental to locals of the sending economy. This is true both at the individual and the aggregate level. The caveat is again that Jews were an above-average skilled group. Yet, the case of the Czech borderlands also shows that expulsion of a group (Germans) that is quite similar to locals (Czechs) can have lasting negative consequences for the expelling economy.

Another focal point of the previous literature has been human capital. What has received comparatively less attention is that forcing out substantial parts of the population can have

additional negative consequences. This may be due to the destruction of physical capital in the case of war, formal and informal networks, or agglomeration economies. For instance, the lack of sufficiently densely populated areas can harm the expelling economy in the long-run (see Testa, 2018).

Returning Refugees

Bahar et al. (2018) take a fascinating look at the effect of repatriation of Yugoslavian refugees from Germany, which was triggered by end of the war and the special “protected” status of refugees in Germany. They provide causal evidence on the role that migrants play in explaining productivity shifts (as measured by export performance) in their home countries after their return. In fact, return migrants provide for export links, i.e. industries benefit from the experience refugees gained while away in Germany.

IV. Consequences of Forced Migration for Migrants Themselves²⁸

Forced migration not only affects receiving and sending populations, but also migrants themselves. The literature on voluntary migration has a long tradition of studying assimilation of migrants, in both the first and subsequent generations (e.g. Algan et al. 2010; Abramitzky and Boustan, 2017). International migrants may need to invest in language skills and other country-specific human capital. Institutional differences in childcare may affect fertility choices. Assimilation can be multi-dimensional, in terms of socio-economic and political outcomes, but migration may also affect cultural choices such as name choice and acquired tastes (see e.g. Bisin and Verdier, 2000; Abramitzky et al., 2018). Many of these dimensions are shared between voluntary and forced migrants.

What sets forced migration apart is its involuntary nature. This comes with at least four distinguishing features that may affect the consequences of forced migration for migrants themselves. First, forced migrants experiencing civil wars, expulsions, or natural disasters may bear lasting effects due to the physical or psychological trauma not experienced by voluntary migrants. Second, forced migrants may lose assets as a result of destruction, expropriation, or because of a hasty departure. Third, they may end up in a suboptimal location as they did not choose to migrate in the first place, and as a result may have limited control over where they go.²⁹ Fourth, their political and economic status at destination may

²⁸ Papers in this section are summarized in Table 3.

²⁹ There is also the opposite possibility: in “normal times” (i.e. when there is no humanitarian case), some countries may not admit economic migrants from certain countries of origin but may well admit refugees from those same countries when they come as refugees.

be uncertain and their expected time of abode may differ from that of voluntary migrants.³⁰ In some circumstances, forced migrants may expect that there is a low probability of return to their home regions (e.g. expulsions after WWII), in others there might be a realistic expectation to return home (e.g. after floods). In both cases, the uncertainty surrounding the time of abode is probably larger than for voluntary migrants.

Recent research has looked at a large number of different outcomes for forced migrants themselves, ranging from labour market outcomes, education and wealth, to health and political outcomes.

A major part of this recent research on forced migrants has exploited historic episodes of forced expulsions and population exchanges following major wars. This is partially explained by what Mitchener (2015) called “The 4D Future of Economic History: Digitally-Driven Data Design.” Digitization of more and more historical censuses has permitted researchers to analyse the consequences of forced migration on outcomes of forced migrants and their descendants, often over several generations. But some researchers have also generated new survey evidence on ancestry which allows us to trace outcomes over longer horizons. This recent research thus permits us to learn not only of the short-term challenges faced by forced migrants, but also how their children, grandchildren and great-grandchildren have fared.

Labour market outcomes

The literature on voluntary migration has a longstanding tradition of looking at the assimilation of migrants in their destination country. In the context of labour market outcomes, this literature documents how education, occupations and earnings of first- and second-generation migrants converge (or not) with those of locals.

Dustmann et al. (2017) give a comprehensive overview of refugee flows into the EU in the last decades and the related literature.³¹ To assess how well past refugees to EU countries have integrated into the labour market compared to economic immigrants from the same area of origin, they draw on the 2008 wave of the European Labour Force Survey (EULFS) that allows them to differentiate between economic and refugee migrants. They look at unconditional and conditional (on age, gender and educational attainment) employment rate differentials between locals and, respectively, EU15 economic immigrants, non-EU15 economic immigrants and refugees overall. Although all immigrant types have lower employment probabilities than locals, both conditionally and unconditionally, the

³⁰ One group of voluntary migrants that also might perceive uncertainty are illegal immigrants.

³¹ De la Rica et al. (2015) give an extensive overview of immigration in Europe, including migration policies. They cover both voluntary migrants and refugees.

employment gaps are larger for non-EU15 immigrants than for EU15 immigrants (3.2 versus 7.2 percentage points unconditional on socio-economic characteristics) and increase to 16.1 percentage points for refugees. Over time, however, refugees catch up in terms of employment. This contrasts with Bratsberg et al. (2014, 2017) who, for Norway, highlight that refugees become increasingly dependent on social insurance transfers.

A growing number of papers over the last decade have looked at the economic integration of forced migrants. Many papers study expulsions in the wake of WWII, when European borders were redrawn. More than 8 million ethnic Germans were expelled from Eastern Europe,³² from territories of the German Empire, and neighbouring countries where Germans had often resided for centuries. Since most of them were expelled from Germany's former Eastern territories, they moved from one part of (former) Germany to another part of Germany.

Falck et al. (2012) analyse the success of the 'Federal Expellee Law' (*Bundesvertriebenengesetz*), in restoring the pre-war occupational status of forced migrants. They find no evidence for a positive effect of the policy on the labour market integration of migrants. They explain these findings by the general economic boom in West Germany after WWII, which improved economic conditions for locals and expellees alike. Bauer et al. (2013) go beyond this work and analyse the economic integration of first-generation migrants and their offspring more broadly, looking at a larger set of outcomes. After 25 years, first generation migrants still tend to fare worse economically, except for displaced agricultural workers. The latter exhibit higher incomes than comparable locals, as displacement caused large-scale transitions out of low-paid agriculture. Differences in economic outcomes of second generation migrants resemble those of the first generation, attesting to a lack of convergence even after several decades. The authors interpret this as evidence that the economic consequences of displacement and the ensuing adjustment processes are long lasting despite the absence of language differences which typically affects (international) migrants.

Forced migration in the wake of WWII also affected other countries. Sarvimäki et al. (2018) study the forced migration of 11% of the Finnish population after the Soviet invasion in 1939. Farmers were resettled to areas resembling the origin regions and given land and assistance to continue farming. Nevertheless, many left agriculture and, on average, displaced farmers ended up earning 11-28% more than comparable non-displaced farmers, suggesting

³² Some studies report 12 million expelled Germans, which includes the 4.1 million refugees who settled in the eastern part of post-WWII Germany, i.e. the later GDR.

substantial returns to leaving farming. However, almost three quarters of the non-displaced farmers chose to remain in agriculture. The fact that so many stayed in agriculture at their location of origin, despite higher income outside agriculture, can be rationalized with a simple habit formation model (or rational addiction model a la Becker and Murphy, 1988), where people are willing to forgo income in order to stay in the location they call home. On the other hand, the fact that more than half of the displaced farmers decided to stay in agriculture suggests that a substantial fraction of farmers either had comparative advantage in agriculture or strong preferences for working in agriculture regardless of the location where their farms were located.

Expulsion also affected Poles living in the Eastern territories of Poland that were taken over by the Soviet Union. These Poles were resettled to Central Poland as well as to the newly acquired Western Territories, the formerly German areas. What is different in the Polish context is that the Western Territories of post-WWII Poland were less congested, with ca. 8 million Germans leaving, and substantially fewer migrating Poles replacing them. So, while German expellees in Western Germany faced a degree of congestion, in Poland's Western Territories, land and other assets were abundant. While Becker et al. (2018) focus on educational outcomes (to be discussed later), they also show that – as a result of an increase in educational attainment of Polish expellees – they have higher earnings than their Polish compatriots, who are either stayers or voluntary movers from parts of Poland that were not subject to expulsions. The earnings results draw on data of second- and third generation migrants measured in 2015, i.e. they capture very long-run outcomes.

Together, these recent results on forced migration in the context of WWII suggest that there is no uniform cost or benefit of expulsion across countries, but that medium- to long-run effects depend on the country-specific context. While West Germany, with its high population density, was quite congested, making it harder for expellees to compete with locals, in the Finnish and Polish context, (many) expellees did well compared to their compatriots.

Natural disasters are another group of events that have received a lot of attention over the last years. Here, displacement is generally within the same country and is often temporary, i.e. in this literature return migration is one outcome of interest. Among the events recently studied are hurricanes in the U.S., and volcano eruptions in Iceland. Deryugina et al. (2018) show that hurricane Katrina in 2005 had large and persistent effects on location choice

of individuals, and only small and transitory negative effects on income and employment. They document these results using detailed Federal tax returns over the period 1999-2013.³³

Nakamura et al. (2018) exploit the outbreak of a volcano on the Westman Islands in Iceland in 1973. They show that individuals whose houses were destroyed moved away permanently. Those aged 25 and older (“parents”) lost out slightly in terms of lifetime earnings. But those younger than 25 years of age at the time of the volcano eruption experienced marked gains in lifetime earnings and education despite the relative economic wealth of their origin location. The authors call this “the gift of moving” and interpret their findings in a way that is related to Sarvimäki et al. (2018): some people are “stuck” in locations that do not fully exploit their economic potential. Young people have a sufficiently long time horizon to be able to benefit from the opportunities available away from a suboptimal location of origin.

Similarities with large waves of voluntary migration

The digital revolution has not only helped new research on forced migration, but also on voluntary migration. Since our focus here is on forced migration, we only selectively mention research on voluntary migration that is arguably most closely related. Forced migration is often characterized by its massive scale, so the closest equivalent in terms of voluntary migration is the U.S. Age of Mass Migration, from 1850 to 1913, when ca. 30 million migrants, mostly from Europe, moved to the U.S. Important recent contributions have documented several important findings: Abramitzky et al. (2014), using U.S. Census Data from 1920 and 1950, look at occupation-based earnings of 1st and 2nd generation immigrants that entered the U.S. during the Age of Mass Migration and show that migrants assimilated well. Alexander and Ward (2018), looking at the same period, show that longer home-country exposure has negative effects on children’s later-life outcomes, i.e. results were better for children entering the U.S. at a very young age. This finding along the age profile relates to findings in the forced migration literature in that those moving at young age do better economically than those moving at a later age.³⁴ Becker and Fetzer (2018) study the

³³ These results go beyond the early findings of Groen and Polivka (2008) who found that, compared to workers in unaffected areas, the unemployment rate of evacuees was 7.4 pp higher (30.6 pp for non-returnees, 6 pp for returnees) initially. With approximately 60 percent of evacuees from Louisiana returning to their pre-hurricane addresses within 14 months, their initial employment gap dissipated quickly and substantially over time.

³⁴ A benefit of moving at young age is also found in the related context of mobility to better neighbourhoods in the U.S. in the context of the “Moving to Opportunity” (MTO) experiment which randomly allocated housing vouchers to a sample of families living in low-income public housing (Chetty et al., 2016) or as a result of public housing demolitions (Chyn, 2018). Since these papers are considered with local mobility and not with migration, we do not discuss them in further detail.

effect of immigration from Eastern Europe to the UK following EU enlargement in 2004. They show that Eastern Europeans mostly settled in places that had limited prior exposure to immigration. These areas subsequently saw smaller wage growth at the lower end of the wage distribution and increased pressure on the welfare state, housing and public services.

Education

Education is the focus of a recent paper by Becker et al. (2018). After World War II, the Polish borders were redrawn, resulting in large-scale migration. Poles were forced to move from the Kresy territories in the East (taken over by the USSR) and were resettled mostly to the newly acquired Western Territories, from which Germans were expelled. While there were no pre-WWII differences in education, Poles with a family history of forced migration are significantly more educated today. Descendants of forced migrants have on average one extra year of schooling, driven by a higher propensity to finish secondary or higher education. This result holds when restricting ancestral locations to a subsample around the former Kresy border and include fixed effects for the destination of migrants. As Kresy migrants were of the same ethnicity and religion as other Poles, confounding factors of other cases of forced migration can be bypassed. Labour market competition with locals and selection of migrants are also unlikely to drive their results. Survey evidence suggests that forced migration led to a shift in preferences, away from material possessions and towards investment in a mobile asset – human capital. The effects persist over three generations.

Several of the papers mentioned already show results for education as one of several outcomes. For instance, Nakamura et al. (2018) showed that young people leaving the Westman Islands as a result of the volcano eruption have 3.5 years higher educational attainment than young people whose houses were unaffected by the volcano eruption. The explanation for this result is that most young people on the Westman Islands work in the fishing and fish processing industries that alone account for roughly 70% of income in the Westman Islands (compared to 15% in the rest of Iceland). Children with comparative skill advantages in jobs requiring a large amount of education such as law, computer science, engineering, or medicine, benefit from the forced move to mainland Iceland. As mentioned earlier, Bauer et al. (2013) show that 1st and 2nd generation German refugees expelled from Eastern Europe and re-settled in Western Germany fare worse across a variety of economic outcomes, except those displaced from agriculture who move into new sectors that require them to acquire the associated educational degrees.

Looking at the effects of Hurricane Katrina on student test scores, Sacerdote (2012) highlights that students forced to switch schools experience sharp declines in test scores in

the first year following the hurricanes. However, by the third and fourth years after the disaster, there is a marked improvement in scores that is mostly driven by the lowest quintile.³⁵ Different from the papers discussed above, this paper looks at test scores instead of years of schooling or educational degrees, and at relatively short-term outcomes, which is natural given the outcome of interest.

Health and well-being

Several fascinating recent studies have highlighted the long-run health effects of forced migration. Bauer et al. (2017) show that post-WWII German expellees have a 12-21% (men) and 3-9% (women) higher mortality risk after the age of 68. Only individuals with significantly higher lifetime earnings (top quintile of the lifetime earnings distribution) overcome this effect.

Haukka et al. (2017), looking at the case of expulsion of Finns by the Soviets in 1940, find that forced migration was associated with increased risk of death due to (ischemic) heart diseases. In contrast, they observe lower suicide mortality among forced migrants 25 or more years after expulsion. In earlier, related work, Saarela and Finnas (2009) detected increased mortality risk of displaced Finns during the late 1980s, during Gorbachev's Perestroika period, that resulted in an intense debate in civil society about restitution of the ceded areas. They explain those results with psychosocial stress arising from renewed hope of returning home several decades after the expulsion.

The work by Lavy et al. (2016) the important role of better health care in utero for education outcomes of refugee children. On May 24, 1991, over 14,000 Ethiopian Jews (all the Jewish population who lived in Addis Ababa and almost the entire Jewish population remaining in Ethiopia) were airlifted to Israel within 36 hours in an operation named "Operation Solomon". Ethiopian children born in Israel between May 27, 1991 and February 15, 1992, had access to better in-utero healthcare in Israel for different durations. They find that children exposed in an earlier stage of the pregnancy to better environmental conditions in utero have two decades later higher educational attainment and higher education quality (better high school results).

Assignment of Refugees

Unlike voluntary migrants, who are generally free to choose their location of residence, conditional on obtaining the right to enter a country (e.g. work visa, or EU free mobility of labour), refugees are often constrained in their location choice in the host country. A lot of

³⁵ Sacerdote quotes Arne Duncan, U.S. Secretary of Education, stating in January 2010: "I think the best thing that happened to the education system in New Orleans was Hurricane Katrina."

research has considered the effect of random assignment of refugees on the host population, as this exogenous variation in exposure of the host population to refugees convincingly identifies causal effects.

An area that has received increasing attention over the last years is how random assignment of refugees to specific locations affects their chances to succeed.³⁶ Beaman (2012) studies the role of social networks on the dynamics of labour market outcomes, using evidence from refugees resettled in the U.S. The key finding is that an increase in the number of social network members resettled in the same year or one year prior to a new arrival leads to a deterioration of outcomes, while a greater number of tenured network members improves the probability of employment and raises the hourly wage.

In closely related work using the same U.S. refugee resettlement program, Dagnelie et al. (2018) show that entrepreneurs in the refugee network help refugees from the same home country to find jobs in the U.S. upon arrival. A refugee's employment probability is positively related to the number of business owners in their network (and who can employ them) and negatively related to the number of employees in their network (who they would compete with for jobs).

In Switzerland, Bansak et al. (2018) find that the ability to speak French (i.e., among French-speaking African refugees) results in a larger payoff for refugees assigned to French-speaking cantons than for those assigned to German-speaking cantons.

Bansak et al. (2018) suggest that allocation of refugees to suitable locations is a way to improve refugee integration and should be given more attention by policy-makers. They propose the use of an algorithm that uses a combination of supervised machine learning and optimal matching to discover and leverage synergies between refugee characteristics and resettlement sites.³⁷ They apply their algorithm to historical registry data from the United States and Switzerland, two countries with different assignment regimes and refugee populations. Their approach leads to gains of roughly 40 to 70%, on average, in refugees' employment outcomes relative to current assignment practices.

Closely related is the work of Couttenier et al. (2016) who study the role of public policies in reducing the criminality of asylum seekers in Switzerland. While their primary

³⁶ See Edin et al. (2003) for the first convincing evidence from Sweden, exploiting the initial random assignment of refugees across Swedish municipalities on subsequent outcomes.

³⁷ Their data-driven approach differs from previous suggestions. Fernández-Huertas Moraga and Rapoport (2014, 2015) couple an auction mechanism for tradeable refugee quotas with a preference-matching algorithm that optimizes over refugees' preferences for resettlement locations and locations' preferences over refugee types.

result is that cohorts of asylum seekers that were exposed to civil conflicts/mass killings during childhood are more likely to engage in crime, this effect is neutralized in cantons where asylum seekers are allowed to rapidly search for paid employment and do not suffer salary deductions compared to locals.

A fascinating new study by Bratsberg et al. (2018) links early experiences of forced migrants in Norway with their political integration, using quasi-exogenous variation in the placement of quota refugees to assess the consequences of assignment to particular neighbourhoods. The difference in electoral turnout between refugees initially placed in 20th and 80th percentile neighbourhoods (in terms of predicted turnout rate) is 12.6 percentage points, which is 47 percent of the observed gap between refugees and residents. They explain their results by the importance of early exposure to politically engaged peer networks.³⁸

A special case of forced migration is the removal of indigenous populations around the world into reservations or similar types of segregated communities, e.g. also apartheid in South Africa. This form of forced migration often went hand-in-hand with discrimination and with a forced imposition of governance structures or institutional arrangements that were a bad fit for the historical norms and institutions of the affected people (see Dippel, 2014, and the related literature cited therein).

V. The Decision to Migrate under Threats³⁹

While the research on war-time expulsions generally argues that migrants had no choice but to leave their home regions, the literature on civil wars and on violence in poor countries is often concerned with the decision to migrate. Modelling the factors influencing migration flows is of course a classical issue in the migration literature going back nearly 150 years (Ravenstein, 1885).

But while the two extremes of completely voluntary and forced migration mark two ends of a spectrum, where the former typically ignores physical threats, and the latter considers force the determining factor, the development literature adds physical threats to one's life as an additional factor in countries afflicted by crime and civil wars. Since not all individuals in localities affected by civil war do migrate, Engel and Ibañez (2007) and Ibañez and Velez (2008) explicitly model migration as a choice in the face of actual and perceived threats. The

³⁸ Another study concerned with the link between forced migration and voting behaviour of migrants is Arbatli and Gomtsyan (2018). They show that Armenians, whose ancestors fled with the help of the Armenian Revolutionary Federation (ARF) from the genocide in the Ottoman Empire (1915-17), are nowadays more likely to vote for the ARF and to name their children after ARF rebels.

³⁹ Papers in this section are summarized in Table 4.

most likely victims of direct threats are small landowners, families with young household heads, and female-headed households, who as a result are also more likely to leave.

While links between actual or perceived levels of violence and migration are well-documented for internal migrations, researchers have started to study the effect of crime on international migration only recently. The reason is that one needs subnational data on region of origin and corresponding crime data to convincingly link migration flows to violence at origin.

Two recent working papers show a link between regional levels of violence and international migration. Shrestha (2017) looks at push and pull factors for emigration from Nepal, using a panel of towns in Nepal. Conditional on pull factors, an increase in the death rate of 100 (per 100,000 population) due to Maoist insurgency in urban areas raises the rate of emigration to India, Malaysia, and the Gulf by 0.8 percentage points.

Clemens (2017), looking at child migrants to the U.S. from Honduras, El Salvador, and Guatemala, shows that high rates of regional violence are a main driver of those flows. Using individual-level, anonymized data on all 178,825 U.S. apprehensions of unaccompanied child migrants from these countries between 2011 and 2016, he finds that one additional homicide per year in the region, sustained over the whole period – that is, a cumulative total of six additional homicides – caused a cumulative total of 3.7 additional unaccompanied child apprehensions in the United States.

Both papers indicate that violence is an important factor not only in internal migration in countries afflicted by civil war, but also a factor driving international migration.

The lesson for researchers is twofold: first, there is a spectrum between perfectly voluntary migration and forced migration and every context deserves careful attention to where on that spectrum a migration episode is located. Second, in intermediate cases where migration – while not voluntary – is also not universal, understanding the factors that drive selective migration are an important area of research.⁴⁰

VI. Summary and directions for future research

Forced migration has received increased attention over the past decade. Two trends emerged: first, research has focused on mass expulsions as a result of major wars, in particular after WWII, and the end of colonial rule, e.g. the population exchanges in India and

⁴⁰ Adam Smith considered poverty and unemployment as push factors for migration (see Rauhut, 2010). While this is typically considered as “economic” migration, it is arguably an intermediate case between fully voluntary and forced migration.

Pakistan after 1947. Second, forced migration as a consequence of natural disasters has led to new insights. While migration for economic reasons follows cost-benefit considerations, migration driven by expulsions and natural disasters is usually universal and leaves individuals barely any choice other than to leave.

In parallel, research on forced migration resulting from civil wars in developing countries, much of which is surveyed by Ruiz and Vargas-Silva (2013), has continued at pace. In this context, migration is often not universal, as perceived threats by warring factions vary across individuals, some of whom move while others stay. Still, migration under these circumstances is forced in the sense that the counterfactual outcomes are continued perceived or actual threats.

Common findings are that mass expulsion poses a challenge for migrants and receiving populations alike. Migrants often take several generations to fully catch up with the receiving population. One notable exception is the Polish case where forced migrants expelled from Poland's Eastern borderlands were resettled in largely empty territory left by Germans. Here, the experience of a loss in physical assets in combination with unhindered access to schooling led forced migrants to overtake other Poles in their education within the first generation. Becker et al. (2018) interpret this finding as confirmation of the uprootedness hypothesis popular among historians, but not rigorously empirically tested before. In other contexts, forced migrants find it challenging to compete with incumbent locals. Oftentimes refugees are not allowed to work for a certain time.

Refugee inflows appear to have limited negative consequences for the host population in the labour market. Depending on the organization of the local economy with respect to job opportunities for forced migrants, the sectoral composition, and the size of the informal sector, the inflow of cheap labour can even be complementary to the existing workforce and increase productivity. Social tension can arise when the rise in productivity does not keep up with the increase in demand for goods and services. This is true for food markets and also other markets that are slower to adjust to new equilibria, such as housing and real estate. Even when forced migrants neither positively nor negatively impact prices, consumption, or the labour market outcomes of the host population, the political implications can be varied as shown by the cases of Denmark and Greece.

The literature surveyed has made a lot of progress in studying the consequences of forced migration on receiving populations, as well as on migrants themselves. The latter usually is discussed with an interest in "integration" of forced migrants. What has received less attention is the effect of forced migration on sending areas. While expulsion of Jews

from office in Germany and the Holocaust have been subject of quite some research, in many other cases the research on consequences of forced migration on receiving populations is not matched by a corresponding study of the effects of the same episode on the sending area. For instance, rigorous empirical analysis of the effect of forced Huguenot immigration from France to Prussia by Hornung (2014) is not matched by equally rigorous research on the effect of expulsion of Huguenots on French regions. The strand of the literature studying the outcomes of stayers in the sending economy has focused on education and economic performance at the aggregate level. Expulsions, however, provide many more changes that can be exploited. This includes the reduction in ethnic or religious diversity, or group-specific wealth and knowledge concentration which can further affect stayers in terms of economic but also social outcomes.

The effects of forced migration on stayers have also mainly been studied for cases of state-mandated expulsion that were near universal. The main challenge when estimating the effects of civil wars or natural disasters is to isolate the impact of forced migration from the direct effects of the shock on stayers' outcomes. Improving our current knowledge in this area would have important policy implications.

An aspect of forced migration that has received little attention is the potential for forced migration to change migrants' preferences.⁴¹ Here, the fact that forced migrants are exposed to a sudden loss of their homes and an exogenous move to a new location allows researchers to shed new light on the role of preferences. This may have important consequences for our understanding of the integration (or not) of forced migrants. While physical and psychological factors may hamper integration, a shift in preferences towards human capital can have payoffs not enjoyed by voluntary migrants. We urge researchers working on forced migration to seriously consider insights from neighbouring disciplines, such as medicine, psychology and sociology to gain a deeper understanding into changes in economic behaviour.

Another potentially interesting aspect on which there seems little research is location "choice" of forced migrants. While voluntary migrants optimize their location choice, forced migrants may end up in a sub-optimal location, depending on how free they are to choose

⁴¹ We are aware of the Stigler/Becker (1977) argument that preference shifts can be accommodated in a framework of stable (generalized) preferences where past experiences affect shadow prices and thereby choices, but we will for simplicity refer to preference shifts, in line with the vast literature on endogenous preferences (e.g. the survey by Bowles, 1998) and consistent with the insights of behavioural economics (see Fehr and Hoff, 2011). See also Jakiela and Ozier (2018) for recent evidence on preference shifts resulting from violence after Kenya's 2007 post-election crisis.

locations. For instance, Syrian refugees can be found in many different countries: Turkey, Lebanon, Germany etc. Who goes where? Within a receiving country, refugees may be allocated to specific destinations without much choice. While the random assignment of refugees to locations has received some attention (e.g. Bansak et al., 2018), there is room for more research in this important area. Somewhat related is the question of how moving in *groups* of forced migrants affects location choice and assimilation at destination. While network aspects have been considered, the focus is typically on existing networks at destination. An aspect specific to mass migrations (both forced and voluntary) is the experience of moving together with many others.

We also hope to see more research in the future that combines information on migrants with contextual variables at both location of origin and destination. Only few studies we have surveyed consider this so far. Many studies looking at mass expulsions just treat forced migrants as coming from a macro region or country without regard for heterogeneity with respect to urban or rural origin, or different geographic or political conditions within the region/country of origin that can yield additional insights into the difficulty or ease of forced migrants to assimilate at their destination.

In summary, we expect a lot of exciting new research in the years to come that covers additional episodes of forced migration, using both historical and contemporary data. Unfortunately, forced migration is likely to be an experience shared by many also in the future. Even if conflict intensities around the world should decline (a big if!), climate change is likely to lead to forced migration as a result of rising sea levels and natural catastrophes.

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Tables

Table 1: Consequences of Forced Migration for Receiving Populations

Author	Origin	Destination	Period	Event	Result
Akgündüz, Y.E., van den Berg, M., and Hassink, W. (2018)	Syria	Turkey	2012 - 2014	Syrian Civil War	firm entry (0), foreign-owned firms (+), gross profits (+) net sales (+)
Altindag, O., Bakis, O., and Rozo, S. (2018)	Syria	Turkey	2012 - 2014	Syrian Civil War	firm creation (+), production (+)
Alix-Garcia, J. and Bartlett, A. (2015)	Darfur (Sudan)	mostly within Sudan	2003 - 2009	Darfur Conflict	native unemployment (-), native high-skill sector employment (+); refugee unemployment (+); short-term wealth for low-skilled natives (-), demand for goods (+)
Alix-Garcia, J. and Saah, D. (2009)	Burundi, Rwanda	Tanzania	1993 - 1994	1993 coup in Burundi, 1994 genocide in Rwanda	prices in goods markets close to refugee camps (+), rural natives' wealth (+), urban natives' wealth (-)
Alix-Garcia, J., Bartlett, A., and Saah, D. (2011)	Darfur (Sudan)	mostly within Sudan	2003 - 2009	Darfur Conflict	food prices (+), housing prices (+), new businesses (+)
Alix-Garcia, J., Bartlett, A., and Saah, D. (2013)	Darfur (Sudan)	mostly within Sudan	2003 - 2009	Darfur Conflict	abandonment of land in rural areas (+), intensive land-use at the periphery of cities (+)
Alix-Garcia, J., Walker, S., Bartlett, A., Onder, H., and Sanghi, A. (2018)	Sudan, Somalia	Kenya	1991 onward	multiple	demand for agricultural and livestock products (+), economic activity (+), consumption in host communities (+)

Table 1 - continued

Author	Origin	Destination	Period	Event	Result
Alix-Garcia, J., Walker, S., and Bartlett, A. (2018)	Sudan, Somalia	Kenya	2015	multiple	reduction in remittances affects consumption of refugees (-), local communities (-)
Baez, J. (2011)	Burundi, Rwanda	Tanzania	1993 - 1994	1993 coup in Burundi, 1994 genocide in Rwanda	mortality (+), infectious diseases (+), body height (-), education (-), literacy (-) for children
Balkan, B. and Tumen, S. (2016)	Syria	Turkey	2012 - 2014	Syrian Civil War	consumer prices (-), refugee labour supply in informal sector (+)
Balkan, B., Tok, E.O., Torun, H., Tumen, S. (2018)	Syria	Turkey	2012 - 2014	Syrian Civil War	house prices (+), native demand for higher quality houses (+), crime rates (0)
Blum, A., Jarotschkin, A., and Zhuravskaya, E. (2018)	Soviet Union	Soviet Union	1939 - 1944	Stalin's ethnic deportations during WWII	gender equality (+) stronger in areas with Protestant (German) deportees than in areas with Muslim deportees (from the North Caucasus)
Braun, S. and Dwenger, N. (2017)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans after WWII	host-refugee differences affect intermarriage (-), support for anti-refugee party (+), refugee labour market outcomes (0)
Braun, S. and Kvasnicka, M. (2014)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans after WWII	share in production from agriculture (-), non-agricultural sectors (+)
Braun, S. and Mahmoud, T. (2014)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans	native employment (-)

Table 1 - continued

Author	Origin	Destination	Period	Event	Result
Calderón-Mejía, V. and Ibáñez, A.M. (2016)	Colombia	internal	1998 - 2013	internal conflict	wages (-) esp. for low-skilled and in informal sector
Chevalier, A., Elsner, B., Lichter, A., and Pestel, N. (2018)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans after WWII	taxes for farms and businesses (+), spending on infrastructure (-), housing (-), welfare (+), political activity by refugees (+)
Depetris-Chauvin, E. and Santos, R.J. (2018)	Colombia	internal	1960s - 2008	internal conflict	rental prices for low-income homes (+) and high-income homes (-), homicide rates (+)
Dinas, E., Hangartner, M., Matakos, K., and Xefteris, D. (2018)	Syria	Greece	since 2011	Syrian Civil War	support for Greek right-wing party (+)
Dippel, C. and Heblich, S. (2018)	Germany	USA	1848	Failed democratic revolution 1848-49	receiving a German democrat refugee leads to volunteering in Union Army (+), desertion rates (-)
Dustmann, C., Vasiljeva, K., and Damm, A.P. (2018)	Lebanon, Iran, Iraq, Somalia, Sri Lanka, Vietnam, Afghanistan, and Ethiopia	Denmark	1986 - 1998	No specific event named	vote share for anti-immigrant parties (+), left parties (-); opposite effect in very large cities
Gehrsitz, M. and Ungerer, M. (2017)	Syria	Germany	since 2011	Syrian Civil War	employment (0), refugee employment (-), petty crime (+)
Hangartner, D., Dinas, E., Marbach, M., Matakos, K., and Xefteris, D. (2018)	Syria	Greece	since 2011	Syrian Civil War	hostilities towards refugees (+), support for restrictive migration policies (+)

Table 1 - continued

Author	Origin	Destination	Period	Event	Result
Hornung, E. (2014)	France	Brandenburg-Prussia	1685	Expulsion of Huguenots	productivity of textile manufactories (+)
Kofol, C. and Naghsh Nejad, M. (2018)	Burundi (1993) and Rwanda (1994)	Tanzania	1990s	Hutu-Tutsi conflict	child labour in short-run (-) and long-run (+), household income in short-run (+) and long-run (-), food prices (+)
Kreibaum, M. (2018)	Democratic Republic of Congo	Uganda	1998 - 2003	Civil war following a coup	consumption (+), public services (+), perception of own econ situation (0)
Labanca, C. (2016)	Egypt, Libya, Tunisia and Yemen	Italy	2011	Arab Spring	employment (0), by sector: construction (+), education (+), hospitality (-), mining (-)
Maystadt, J. and Werwimp, P. (2014)	Burundi (1993) and Rwanda (1994)	Tanzania	1990s	Hutu-Tutsi conflict	competition in agriculture labour markets (+)
Maystadt, J.-F. and Duranton, G. (2018)	Burundi (1993) and Rwanda (1994)	Tanzania	1990s	Hutu-Tutsi conflict	welfare (+), consumption (+), investment in transportation network (+)
Mirza, R.A. (2018)	India	Pakistan	1947 - 1951	Partition of India/Pakistan	urbanization (+), literacy (+)
Morales, J.S. (2018)	Colombia	internal	1960s - 2008	internal conflict	wages (-) in short-run, wages in long-run for men (0) and women (-), native outmigration (+)
Moser et al. (2014)	Germany	USA	1933 - 1945	Removal of Jews from civil service before the holocaust	patenting (+), new patentees in affected patent field (+)

Table 1 - continued

Author	Origin	Destination	Period	Event	Result
Murard, E. and Sakalli, S. (2018)	Turkey	Greece	1922	After the Greco-Turkish war of 1919–1922	modern earnings (+), household wealth (+), education (+), size of financial and manufacturing sector (+)
Peters, M. (2017)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans after WWII from Middle and Eastern Europe	per capita incomes (+), manufacturing employment (+), new plant entries (+)
Ruiz, I. and Vargas-Silva, C. (2015)	Burundi (1993) and Rwanda (1994)	Tanzania	1990s	Hutu-Tutsi conflict	probability of working in government or professional occupations (+)
Ruiz, I. and Vargas-Silva, C. (2016)	Burundi (1993) and Rwanda (1994)	Tanzania	1990s	Hutu-Tutsi conflict	employment (-), household work (+)
Sarvimäki, M. (2011)	South-East Finland	South-West Finland	1940 - 1944	Soviet invasion	population growth (+), industrialization (+), wages (+)
Schumann, A. (2014)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans	population (+), economic activity: industry employment (+), firms (+)
Tumen, S. (2016)	Syria	Turkey	2012 - 2014	Syrian Civil War	informal employment (-), long-term unemployment (+), wages (0)
Tumen, S. (2018)	Syria	Turkey	2012 - 2014	Syrian Civil War	high-school enrolment (+)

Note: Unless otherwise specified, outcomes are expressed as effects of an influx of forced migrants on the native population. Effect directions are denoted as: (+) positive effect, (-) negative effect, (0) zero effect.

Table 2: Consequences of Forced Migration for Sending Populations

Author	Origin	Destination	Period	Event	Result
Acemoglu, D., Hassan, T.A., and Robinson, J.A. (2011)	Soviet Union	NA	1941 - 1945	Expulsion and murder of Jews by the Nazis during WWII	population (-), per capita income and wages (-), vote share for Communist party in post-Soviet era (+)
Akbulut-Yuksel, M. and Yuksel, M. (2015)	Germany	NA	1933 - 1945	Removal of Jews from civil service before expulsion and mass murder began	years of education (-), prob. of finishing school (-), prob. of going to college (-)
Arbatli, C.E. and Gokmen, G. (2017)	Turkey	Greece, Armenia and various other countries	Armenians: 1915-17 Greeks: 1919-23	Expulsion of Greeks and Armenians	modern outcomes in 2000: population density (+), urbanization (+), nightlight intensity (+)
Bahar, D., Hauptmann, A., Özgüzel, C., and Rapoport, H. (2018)	Yugoslavia	Germany	1991-95	Breakup of Yugoslavia	return migration affected exports in receiving product categories (+)
Beine, M. and Parsons, C. (2015)	multiple	multiple	1960 - 2000	climate anomalies	natural disasters/rainfall shocks in sending econ.: bilateral migration flows (+)
Bharadwaj, P., Khwaja, A. I., and Mian, A. (2015)	India/Pakistan	India/Pakistan	1947 - 1951	Indian Partition	literacy (-), but literacy (+) if Indian refugees received from Pakistan

Table 2 - continued

Author	Origin	Destination	Period	Event	Result
Cattaneo, C. and Peri, G. (2016)	multiple	multiple	1960 - 2000	climate anomalies	temperature incr. in sending econ.: migration and urbanization in middle-income countries (+) and low-income countries (0)
Engel, S. and Ibañez, A. M. (2007)	Colombia	internal	around 2000	civil conflict	incr. in violence in sending econ.: migration (+)
Grosfeld, I., Rodnyansky, A., and Zhuravskaya, E. (2013)	Soviet Union	NA	1941 - 1945	Expulsion and murder of Jews by the Nazis during WWII	entrepreneurship (-), support for liberal market policy (-) and democracy (-), trust (+), consumption (0), income (0), education (0)
Huber, K., Lindenthal, V., and Waldinger, F. (2018)	Germany	NA	1933 - 1938	Removal of Jews from civil service and other positions of leadership	quality of senior management (-), firm stock price (-), return to assets (-)
Marchiori, L., Maystady, J.-F., and Schumacher, I. (2012)	multiple	NA	1960 - 2000	multiple	rain and temperature shocks in sending econ.: migration (+), urbanization (+)
Pascali, L. (2016)	Italian municipalities	NA	1470 - 1570	none specifically	modern outcomes: bank branch density (-), availability of credit (-), incomes (-)

Table 2 - continued

Author	Origin	Destination	Period	Event	Result
Testa, P.A. (2018)	Czech borderlands	mostly Germany	1945 - 1947	Expulsion of Germans after WWII	modern outcomes: population density (-), unemployment rates (+), skill-intensive industry (-), education (-)
Waldinger, F. (2010)	Germany	NA	1933 - 1945	Removal of Jews from civil service before expulsion and mass murder began	faculty quality (-), publications of PhDs (-), prob. of becoming full professor (-), lifetime citations (-)
Waldinger, F. (2012)	Germany	NA	1933 - 1945	Removal of Jews from civil service before expulsion and mass murder began	productivity due to peer effect (0)

Note: Unless otherwise specified, outcomes are expressed as effects of an outflow of forced migrants on the economy or people of the sending area. Effect directions are denoted as: (+) positive effect, (-) negative effect, (0) zero effect.

Table 3: Consequences of Forced Migration for Migrants Themselves

Author	Origin	Destination	Period	Event	Result
Arbatli, C.E. and Gomtsyan, D. (2018)	Ottoman Empire	Armenia	1915 - 1917	Armenian Genocide	votes for Armenian Revolutionary Federation (+), name children after ARF rebels (+)
Bansak, K., Ferwerda, J., Hainmueller, J., Dillon, A., Hangartner, D., Lawrence, D., and Weinstein, J. (2018)	French-speaking Africa	Switzerland	1999 - 2013	none specifically	payoffs from relevant language skills (+)
Bauer, T. K., Braun, S., and Kvasnicka, M. (2013)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans	econ outcomes of 1st gen (-), except displaced farmers: income (+)
Bauer, T.K., Giesecke, M., and Janisch, L.M. (2017)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans after WWII	mortality risk after age 68 (+)
Beaman, L.A. (2012)	multiple	USA	2001 - 2005	Refugee resettlement	econ outcomes relate to network members who arrive in the same year (-) and those who have already been established in the area before (+)
Becker, S.O., Grosfeld, I., Grosjean, P., Voigtlaender, N., and Zhuravskaya, E. (2018)	Central Poland and Eastern Territories (Kresy)	Central Poland and Western Territories (ex-German areas)	1945 - 1946	Expulsion of Poles after WWII	descendants of forced migrants: education (+), high school and higher ed completion (+), preferences for intangible assets (+)
Bratsberg, B., Raaum, O., and Røed, K. (2014)	multiple	Norway	1970 - 2014	none specifically	diff to natives for migrants from high-inc countries (0), for low-inc countries: empl (-), participation in social programs (+)

Table 3 - continued

Author	Origin	Destination	Period	Event	Result
Bratsberg, B., Raaum, O., and Røed, K. (2017)	multiple	Norway	1970 - 2014	none specifically	low-income country migrants' employment (-), social insurance update (+) in long-run
Bratsberg, B., Ferwerda, J., Finseraas, H., and Kotsadam, A. (2018)	multiple	Norway	1990 - 2012	none specifically	political participation of refugees settling in areas with politically active peers (+)
Chyn, E. (2018)	low income areas in Chicago	other areas in Chicago	1990s	Demolitions of public housing	employment (+), wages (+), education (+), crime (-)
Cortes, K. E. (2004)	multiple	USA	1975 - 1980	none specifically	in 1980: employment (-), earnings (-). In 1990: employment (+), earnings (+), English skills (+)
Couttenier, M., Preotu, V., Rohner, D., and Thoenig, M. (2016)	multiple	Switzerland	2009 - 2012	none specifically	experience of violence in home country: crime (+) but labour market access policies remove this effect
Dagnelie, O., Mayda, A.M., and Maystadt, J.-F. (2018)	multiple	USA	2005 - 2010	none specifically	employment (+) if other refugees in network are employers, but (-) if they are also employees
Deryugina, T., Kawano, L., and Levitt, S. (2018)	New Orleans, USA	other parts of the US	2005	Hurricane Katrina	income (-), employment (-) but small and temporary
Dippel, C. (2014)	USA	other parts of the US	1850 - 1890	Creation of Indian reservations	incomes (-)
Dustmann, C., Fasani, F., Frattini, T., Minale, L., and Schoenberg, U. (2017)	several	EU	until 2008	none specifically	employment (-)

Table 3 - continued

Author	Origin	Destination	Period	Event	Result
Falck, O., Heblich, S., and Link, S. (2012)	Eastern Europe (mostly ex-German territories)	(West) Germany	1944 - 1946	Expulsion of Germans after WWII	effect on refugees from integration law (0)
Groen, J.A. and Polivka, A.E. (2008)	New Orleans, USA	multiple	2005	Hurricane Katrina	unemployment (+) but temporary
Haukka, J., Suvisaari, J., Sarvimäki, M., and Martikainen, P. (2017)	South-East Finland	South-West Finland	1940 - 1944	Soviet invasion	prob. of dying from heart disease (+), suicide mortality (-)
Lavy, V., Schlosser, A., and Shany, A. (2016)	Ethiopia	Israel	1991	Evacuation of Jews from Ethiopia	educational attainment (+) and educational equality (+) of children who spent more time in utero under Israeli healthcare
Marbach, M., Hainmueller, J., and Hangartner, D. (2018)	Yugoslavia	Germany	1991 - 2001	Yugoslav Wars	reduction in waiting period to enter labour market: employment (+), integration (+) for affected group
Nakamura, E., Sigurdsson, J., and Steinsson, J. (2018)	Iceland (Westman Islands)	other parts of Iceland	1973	Volcanic eruption	lifetime earnings (+) and education (+) if aged < 25, earnings (-) but small effect if aged >25
Ruiz, I. and Vargas-Silva, C. (2018)	several	UK	2010 - 2017	none specifically	employment (-), earnings (-)
Saarela, J. and Finnas, F. (2009)	South-East Finland	South-West Finland	1940 - 1944	Soviet invasion	mortality risk (+) due to Perestroika for Finns displaced during WWII

Table 3 - continued

Author	Origin	Destination	Period	Event	Result
Sacerdote, B. (2012)	New Orleans	Louisiana and neighbouring states	2005	Hurricanes Katrina and Rita	school test scores (-), dissipates over time
Sarvimäki, M., Uusitalo, R., and Jäntti, M. (2018)	South-East Finland	South-West Finland	1940 - 1944	Soviet invasion	prob. of non-agriculture job for former farmers (+), earnings (+)

Note: Unless otherwise specified, outcomes are expressed as effects of migration on the forced migrants themselves. Effect directions are denoted as: (+) positive effect, (-) negative effect, (0) zero effect.

Table 4: The Decision to Migrate under Threats

Author	Origin	Destination	Period	Event	Result
Clemens, M. (2017)	Honduras, El Salvador, Guatemala	USA	2011 - 2016	Emigration from home countries due to violence	homicides in sending econ.: unaccompanied migrant children to U.S. (+)
Ibañez, A. M. and Velez, C. E. (2008)	Colombia	internal	around 2000	civil conflict	welfare loss from displacement (+)
Shrestha, M. (2017)	Nepal	India, Malaysia, and the Gulf	2000s	Maoist insurgency	incr. death rate due to Maoist insurgency: emigration (+)

Note: Effect directions are denoted as: (+) positive effect, (-) negative effect, (0) zero effect.